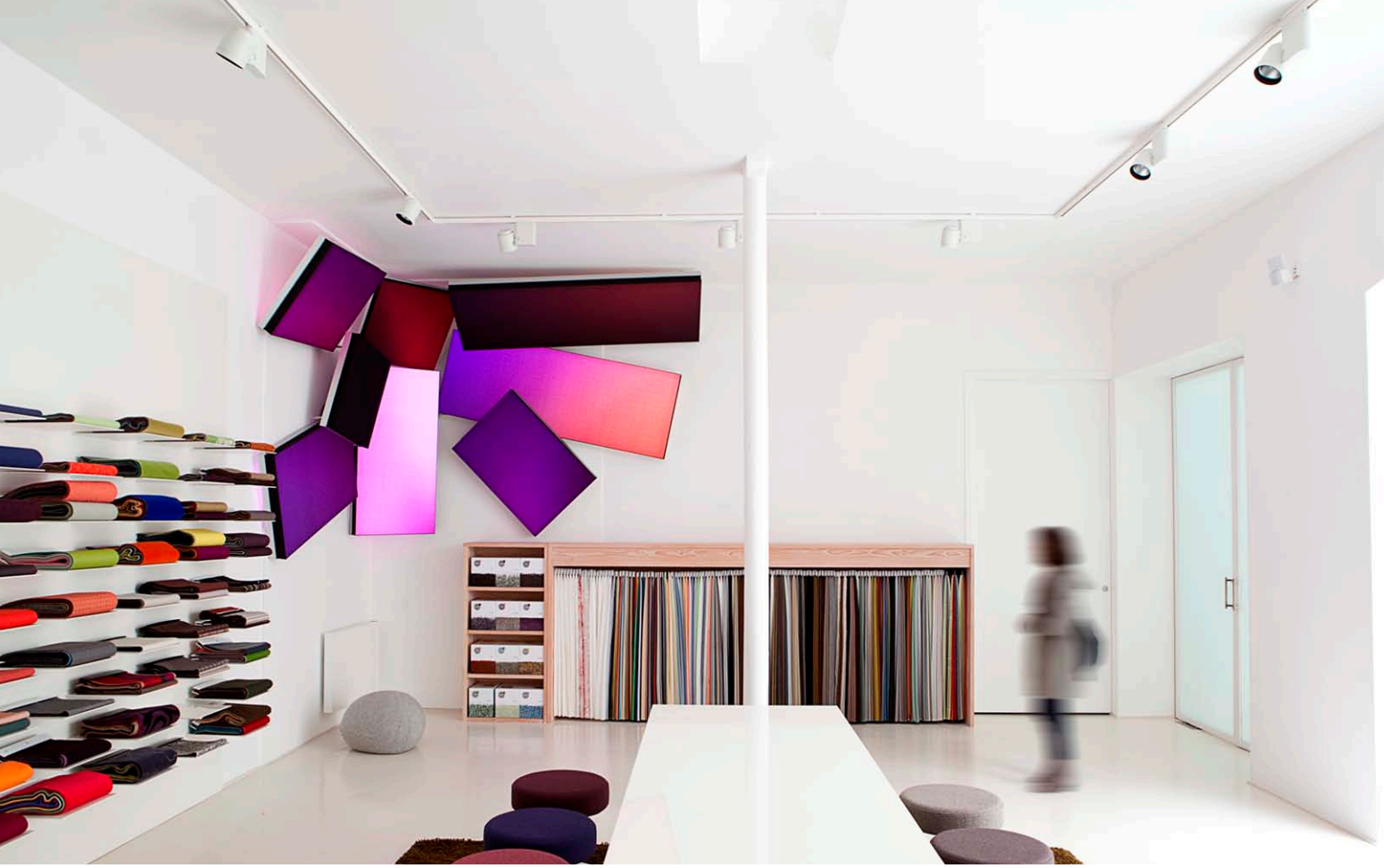

Philips luminous textile with **kvadrat soft cells**

Application note: Integration of Pharos controls with luminous textile panels

PHILIPS

© Royal Philips Electronics N.V. 2013

Document information

Info	Content
Title	Integration of Pharos controls with luminous textile panels, Application note
Date	April 2013
Security	The attached material and the information contained herein are proprietary to Large Luminous Surfaces, Philips Lighting BV. Copying, reproduction, adaptation, modification or dissemination in whole or part is not permitted without written permission from Large Luminous Surfaces, Philips Lighting.
Contact address	Large Luminous Surfaces, Philips Lighting B.V. head quarters: High Tech Campus 27 5600 AE Eindhoven, the Netherlands *Email: info.luminous-textile@philips.com* *Website: www.largeluminoussurfaces.com*

Contents

1. Introduction

Welcome to the world of luminous textiles
The luminous textile panels (LTP) are the latest innovation from Philips Lighting in the Large Luminous Surfaces segment. LTPs are capable of transforming any lobby, retail environment, hotel or open office space into a customer-oriented environment.

Key features of a luminous textile panel
Unlimited design freedom
Customizable visuals: adjustable dynamic lighting scenes
A selection of several approved Kvadrat textiles
A modular system that can be connected to the mains

About Content Manager
Download the Content Manager 2.0 from our website: *www.LLcontent.com/downloads*

The Content Manager 2.0 is a software tool that enables the user to create a story on the luminous textile panels. The software manages the configuration, content editing, scheduling and conversion to compatible formats.

The user can import media, scale and map them onto the installation, combine them with a timeline and program a scheduler so presentation of the story begins at the predefined time.

Once the story is created, the software handles the conversion and uploads it to the luminous textile panels via Ethernet.

This enables the user to create any mood, story or amazing animation on the luminous textile panels without any creative limitations and without a steep learning curve thanks to the self-explanatory user interface.

2. Interfacing with luminous textile panel

The luminous textile panel (LTP) has an Ethernet connection, which makes it possible to integrate into an existing network. The physical interface is RJ-45 and 100Base-T, and has Auto-MDIX capability. This means that no special cable (straight through or patch) is needed to connect it to a router, switch or other Ethernet device.

The LTP is standard configured as DHCP client, meaning that it will get an address from a DHCP server. A DHCP server is present in all commercial routers. An optional possibility is to configure the LTP such that it has a static IP address, however this configuration is out of the scope of this white paper, and is explained in more detail in the LTP user manual.

The LTP has a built-in web server, which is used to control the LTP using your favorite web-browser on your PC, Apple or mobile system. Once you have discovered the IP address of the panel (read LTP User manual), you can type the address in the address bar of your browser. This will show the main webpage of the LTP (see Figure 1). This webpage contains some status information, like panel name (luminous textile panel), the album and playlist name ("long_Food_iluminesca_7" and "Chocolate"). Further, you can press the buttons: Previous, Play, Stop and Next. See the LTP user manual on our website *www.largeluminoussurfaces.com* for more information on how to control the LTP.

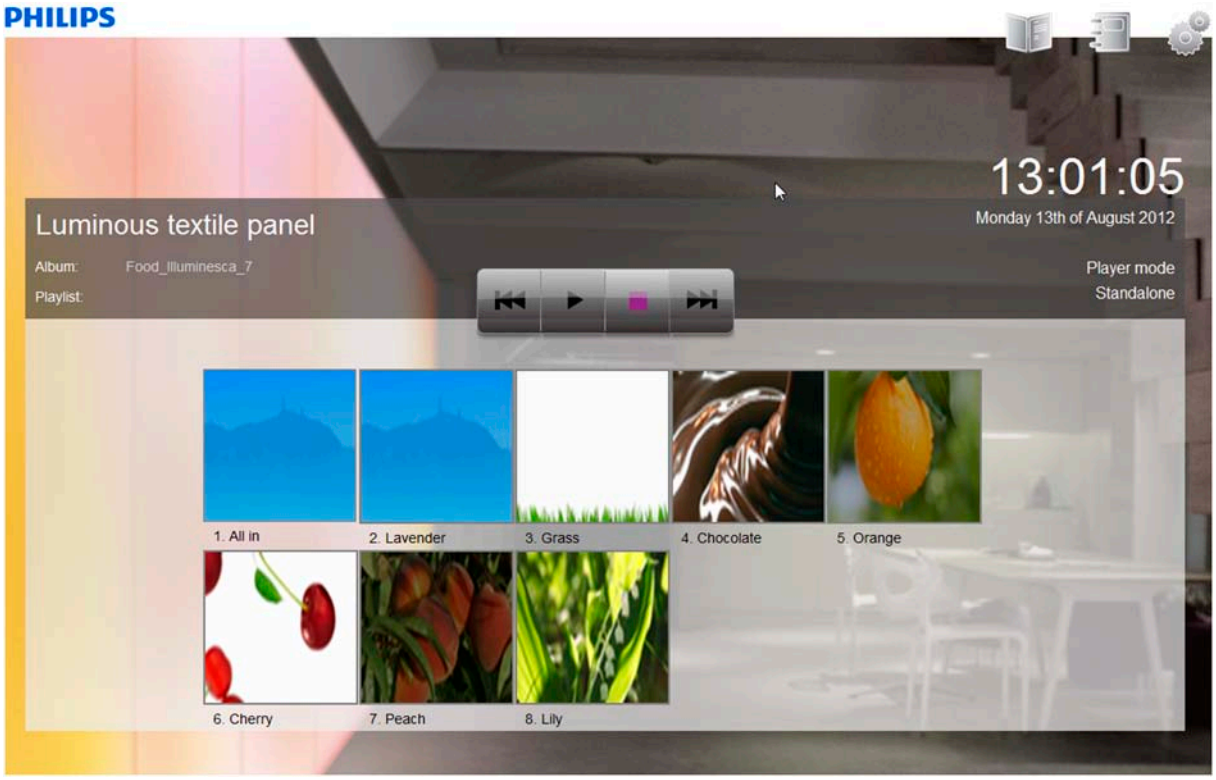

Figure 1: Control page

Each button specifies a command which is is sent to the LTP; the LTP will execute that specific command, and you will see that the status of the panel will change depending on the button (command) that is pressed.
The next step is to learn how to control the LTP from another device that is on the same network as the LTP.

3. Command set

As you have seen in the previous chapter, the panel can be controlled by sending specific commands. These commands are based on the HTTP GET calls, which are the same as the web-address that can be typed in the address bar of your browser. This can also be an easy way to test these commands and the behavior of the LTP

For instance, if you type in the address bar (if the IP address of the panel is 192.168.0.190):

http://192.168.0.190/control.php?command=Next

The LTP will jump to the next playlist of the current content file the LTP is playing. Note that it needs to be sent to the LTP which has been configured as "Master" only. The other panels which are configured as "Slave" will follow automatically.

This means that you can send these commands using a program or script on a PC. And if that script follows other actions depending on external event, you can make an interactive application. Also, other control systems besides PCs can be used, as long as they have the capability of sending http calls. For instance, it is possible to send these commands using Pharos video playback systems - this will be explained in chapter 3. Sometimes, some special characters are required in the command, but that depends on the control system used. Please read carefully the user manual of your control system. An example is also shown in chapter 3.

Below is a list of the possible commands, including an explanation of them (as an example an IP address of 192.168.0.190 of the panel is taken). Also, take note that the commands are case sensitive. Firmware release 1.0.0 responds to slightly different commands.

Command list for release 1.0.0:

Command	Action
http://192.168.0.190/control.php?command=Start	This will start to play the first playlist in the content file which is present on the panel.
http://192.168.0.190/control.php?command=Stop	This will stop playing content, and the power supply will go to low-power, no content is visible on the LTP.
http://192.168.0.190/control.php?command=Next	This will start to play the next playlist in the content file; if it is the last one, it will keep playing this last playlist.
http://192.168.0.190/control.php?command=Prev	This will start to play the previous playlist in the content file; if it is the first one, it will keep playing this first playlist.
http://192.168.0.190/control.php?command=Pause	This will pause at the current image. Sending the command again will resume play.
http://192.168.0.190/control.php?command=Identify	This will show an image on the panel to verify that this panel is addressed, and correctly rotated. This action will only be performed by the addressed LTP.
http://192.168.0.190/control.php?command=Playlist&playlist=2	This will start to play playlist 2 in the content file which is present on the panel. It will keep playing the current playlist if the playlist in the command is not valid. Playlist 0 is the first playlist in the content file.
http://192.168.0.190/control.php?command=Start http://192.168.0.190/control.php?command=File&file=content.lcf&playlist=2	This will start to play content stored in the content.lcf content file and especially playlist (sequence) 2 in that content file. Playlist 0 is the first playlist in the content file. The 1.0.0 firmware release needs an extra http call to execute this command. The "Start" call needs to be executed before the "File" command.

Commands list for releases above 1.0.0:

Command	Action
http://192.168.0.190/control.php?command=Start	This will start to play the first playlist in the content file which is present on the panel.
http://192.168.0.190/control.php?command=Stop	This will stop playing content, and the power supply will go to low-power, no content is visible on the LTP.
http://192.168.0.190/control.php?command=Next	This will start to play the next playlist in the content file; if it is the last one, it will keep playing this last playlist.
http://192.168.0.190/control.php?command=Prev	This will start to play the previous playlist in the content file; if it is the first one, it will keep playing this first playlist.
http://192.168.0.190/control.php?command=Pause	This will pause at the current image. Sending the command again will resume play.
http://192.168.0.190/control.php?command=Identify	This will show an image on the panel to verify that this panel is addressed, and correctly rotated. This action will only be performed by the addressed LTP.
http://192.168.0.190/control.php?command=Playlist&playlist=2	This will start to play playlist 2 in the content file which is present on the panel. It will keep playing the current playlist if the playlist in the command is not valid. Playlist 0 is the first playlist in the content file.
http://192.168.0.190/control.php?command=File&file=content.lcf&playlist=2	This will start to play content stored in the content.lcf content file and especially playlist (sequence) 2 in that content file. Playlist 0 is the first playlist in the content file.

With this set of commands it is possible to control the LTP the same way as on the webpage.

4. Control the LTP using a Pharos LPC

The Pharos LPC is a programmable multi-functional lighting control system, and has too many features to list here. More information can be found at http://www.pharoscontrols.com/products/lighting_controllers/lpc

The Pharos LPC has an Ethernet interface which should be connected, for instance, to the switch or router in the same network.

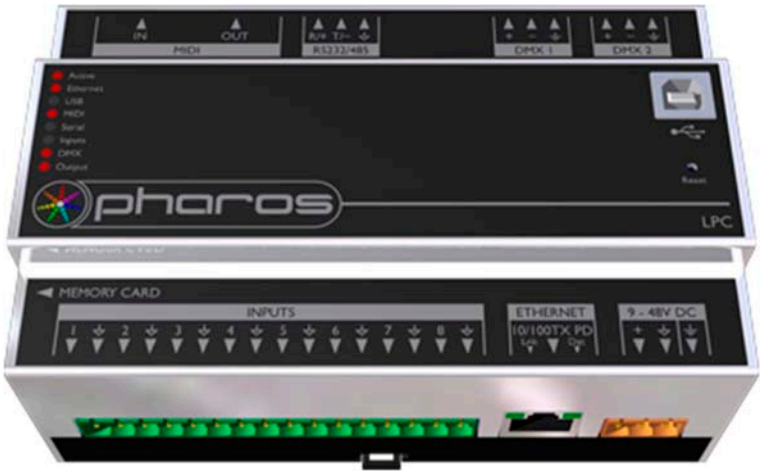

Figure 2: Pharos LPC

Here you can find the general steps for programming the Pharos LPC:

1. Ensure the LPC and LLS panels are on the same network (ensure no firewall and/or router settings are blocking any traffic).
2. Note the IP address of the LLS Master panel and the Pharos LPC. This should be a fixed IP (or fixed assigned IP) to ensure it will also work after a power cycle. In our example the LLS panel has 10.3.31.101, and the LPC has 10.3.31.100.
3. Note the *.lcf filename you are using in the LLS master panel.
4. Setup Bus 1 for TCP communication on port 80 (Pharos Designer: network → interface tab).
5. On the (Pharos Designer: trigger tab) use the following action data:
   Ethernet output trigger to
   IP Address: [IP address LLS Master panel]
   Port: 80
   Protocol: TCP
   Persist As: Bus 1
6. To start the LTP run the show use the following ASCII String:
   GET /control.php?command=Start http/1.1\r\nHost: <IP Address Pharos>\r\n\r\n

   N.B. This string is case and space sensitive!
   example: GET /control.php?command=Start http/1.1\r\nHost: 10.3.31.100\r\n\r\n)
7. To stop the LTP run the show use the following ASCII String:
   GET /control.php?command=Stop http/1.1\r\nHost: <IP Address Pharos>\r\n\r\n

   N.B. This string is case and space sensitive!
   example: GET /control.php?command=Stop http/1.1\r\nHost: 10.3.31.100\r\n\r\n
8. To start Playlist 1 use the following ASCII String:
   *GET /control.php?command=File&file=<LLS *.lcf filename>&playlist=1 http/1.1\r\nHost: <IP Address Pharos>\r\n\r\n*

   N.B. This string is case and space sensitive!
   example:
   GET /control.php?command=File&file=Illuminesca_8sept_fin.lcf&playlist=1 http/1.1\r\nHost: 10.3.31.100\r\n\r\n

9. To start Playlist 2 use the following ASCII String:
   *GET /control.php?command=File&file=<LLS *.lcf filename>&playlist=2 http/1.1\r\nHost: <IP Address Pharos>\r\n\r\n*

   N.B. This string is case and space sensitive!
   example:
   GET /control.php?command=File&file=Illuminesca_8sept_fin.lcf&playlist=2 http/1.1\r\nHost: 10.3.31.100\r\n\r\

5. Contact / Information

Large Luminous Surfaces, Philips Lighting B.V. head quarters:

High Tech Campus 27

5600 AE Eindhoven, the Netherlands

Email: info.luminous-textile@philips.com

Website: www.largeluminoussurfaces.com

Philips reserves the right to make design and specification changes
for product improvement without prior notice.
Trademarks are the property of Royal Philips Electronics or their respective owners.
2013© Royal Philips Electronics.
All rights reserved.